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SolarCity Corp.

**UNITED STATES DISTRICT COURT**

**NORTHERN DISTRICT OF CALIFORNIA**

JOSE ALBINO LUCERO JR., on Behalf of Himself and all Others Similarly Situated,

Plaintiffs,

v.

SOLARCITY CORP.,

Defendant.

Case No. 3:15-cv-05107

**DECLARATION OF RAY HORAK IN SUPPORT OF DEFENDANT SOLARCITY CORP.'S OPPOSITION TO MOTION FOR CLASS CERTIFICATION**

**Hon. Richard Seeborg**
**Action Filed: November 6, 2015**

**Hearing Date: March 9, 2017**
**Time:**

## DECLARATION OF RAY HORAK

I, Ray Horak, declare:

1. The Context Corporation has been retained by the law firm of Orrick, Herrington & Sutcliffe LLP to provide a report and testimony on behalf of SolarCity Corp. ("SolarCity") in the matter of *Jose Albino Lucero Jr. v. SolarCity Corp.* in U.S. District Court, Northern District of California, No. 3:15-cv-05107.

2. I am not a party to this matter. I am over the age of eighteen years old, have never been convicted of a felony and am competent to make this report. All statements I make within this report are within my personal knowledge and are true and correct to the best of my knowledge. I am being compensated at the hourly rate of $400.00 for all my activities associated with the present case. No portion of my compensation is in any way dependent on the outcome of this litigation.

3. Counsel for SolarCity asked me to provide my expert opinion relative to whether or not [redacted]. I also have been asked to review and comment on the Declaration of Randall A. Snyder, designated as the Plaintiff's expert in this matter. Toward those ends, counsel for SolarCity granted me access to a number of relevant documents, a complete list of which appears on Pages 20-21 under the heading Materials Reviewed.

## BACKGROUND AND QUALIFICATIONS

4. I have more than 45 years of professional experience as a manager, executive and consultant in the field of telecommunications. I am a telecommunications expert in various aspects of telecommunications, including wireline and wireless voice, data and facsimile systems and networks. My consulting activities are at the strategic and tactical levels, and I count

manufacturers, distributors and end users among my clients. I have been retained as a consulting or testifying expert in more than 50 cases, including more than 40 in which compliance with the Telephone Consumer Protection Act (TCPA) and/or related state and federal statutes and associated regulations were at issue. I regularly conduct reviews and analyses of current and proposed telephony systems to determine their level of compliance with the TCPA.

I have authored five technical books on the subject of telecommunications. *Communications Systems and Networks* is a best-selling encyclopedic work that deals in detail with voice, data, facsimile, video and multimedia telecommunications technologies and their practical applications. Three editions (1997, Henry Holt and Company; 2000, IDG Books; 2002, Wiley Publishing) of that work sold in excess of 60,000 copies, in total. *Voice and Data Communications Handbook* (2007 and 2008, Wiley-Interscience), similarly, is a best-selling encyclopedic work that deals in detail with voice, data, facsimile, video and multimedia telecommunications technologies and their practical applications. *Communications Systems and Networks and Voice* and *Data Communications Handbook* have been used extensively as textbooks by leading colleges and universities in the United States of America and abroad. *Webster's New World Telecom Dictionary* (2007, Wiley Publishing) is a telecom reference for telecommunications terminology. All of these works are peer-reviewed and critically acclaimed. Additionally, I served as Senior Contributing Editor for the best-selling *Newton's Telecom Dictionary* (12th-22nd Editions, 1997-2006) and as Technical Editor for *Deploying Secure 802.11 Wireless Networks with Microsoft Windows* (2004, Microsoft Press).

5. I have written hundreds of articles, case studies, white papers and columns on a wide variety of technical telecommunications subjects for print publications including *Communications Convergence*, *Computer Telephony*, *Computing Channels*, *Datapro Communications Analyst*, *Datapro Managing Global Communications*, *Datapro Worldwide IT Analyst*, *The Journal of Telecommunications in Higher Education*, *Network Magazine*, *Network World*, *The Prepaid Press*, *PROCOMM*, *TCA Extensions*, *Telecomm Reseller*, *Telecommunications Reseller Opportunities*, *Teleconnect* and *Voice Processing Magazine*. I have served as the Technology

Editor for *Telecom Reseller* magazine, for which I have written well over 150 articles on telecommunications technology.

6. I have served on a considerable number of Advisory Boards, Editorial Advisory Boards and conference Steering Committees. I currently serve on the Editorial Advisory Boards of the *Journal of Information Communications Technology in Higher Education* and *The Prepaid Press*. I served for many years on the Advisory Boards of the McLaren Graduate School of Business of the University of San Francisco and the Electronics/Telecommunications Technology Program of Skagit Valley College.

7. I have lectured on telecommunications technologies and their practical applications at universities, conferences and a wide variety of seminar and other educational venues before tens of thousands of telecommunications students and professionals in Africa, AustralAsia and Europe, as well as the United States and Canada. I have served on the faculties of a number of seminar companies and institutions, including Business Communications Review (BCR), Computer Education Services Company (CESC), Institute for International Research (IIR), Network World Technical Seminars and Terrapin. I variously have led tutorials and seminars, moderated and served on panels, and served as a keynote speaker at well over 100 conferences. I have served as an Adjunct Faculty Member of the McLaren Graduate School of Business of The University of San Francisco, where I taught a graduate level course in telecommunications. I also served as an Adjunct Faculty Member of San Francisco State University, where I taught several undergraduate courses in telecommunications management.

8. I hold the following degrees:

- Associate in Arts (AA), Del Mar College, 1966
- Bachelor of Business Administration (BBA), University of Texas at Austin, 1968
- Master of Business Administration (MBA), University of Texas at Austin, 1970

Separately, I have filed a curriculum vitae, a list of published works, and a list of cases in which I previously have testified as Exhibit A.

**AUTOMATIC TELEPHONE DIALING SYSTEM (ATDS)**

9. Under the TCPA, "the term 'automatic telephone dialing system' means equipment which has the capacity—

(A) to store or produce telephone numbers to be called, using a random or sequential number generator; and

(B) to dial such numbers.

See Telephone Consumer Protection Act—Restrictions on the use of telephone equipment 47 U.S.C. § 227. Definitions (a))

10. The FCC in its Notice of Proposed Rulemaking of May 22, 2012, stated:

> "Under the TCPA, the term "automatic telephone dialing system" is defined as 'equipment which has the capacity– (A) to store or produce telephone numbers to be called, using a random or sequential number generator; and (B) to dial such numbers.' Id. at § 227(a)(1). The Commission has emphasized that this definition covers any equipment that has the specified capacity to generate numbers and dial them without human intervention …." (¶ 5, footnote 12)

11. The FCC interpreted the term "capacity" to include "potential ability" in the TCPA Omnibus Declaratory Ruling and Order (FCC 15-72), adopted June 18, 2015, but noted that:

> "We do, however, acknowledge that there are outer limits to the capacity of equipment to be an autodialer. As is demonstrated by these precedents, the outer contours of the definition of 'autodialer' do not extend to every piece of malleable and modifiable dialing equipment that conceivably could be considered to have some capacity, however small, to store and dial telephone numbers— otherwise, a handset with the mere addition of a speed dial button would be an autodialer. Further, although the Commission has found that a piece of equipment can possess the requisite 'capacity to satisfy the statutory definition of 'autodialer' even if, for example, it requires the addition of software to actually perform the functions described in the definition, there must be more than a theoretical potential that the equipment could be modified to satisfy the 'autodialer' definition. Thus, for example, it might be theoretically possible to modify a rotary-dial phone to such an extreme that it would satisfy the definition of 'autodialer,' but such a possibility is too attenuated for us to find that a rotary-dial phone has the requisite 'capacity' and therefore is an autodialer" (p. 15 ¶ 18)

The FCC also stated:

> "The Commission has also long held that the basic functions of an autodialer are to 'dial numbers without human intervention' and to 'dial thousands of numbers in a short period of time.' How the human intervention element applies to a particular piece of equipment is specific to each individual piece of equipment, based on how the equipment functions and depends on human intervention, and is therefore a case-by-case determination." (p. 15 ¶17)

12. Notably, the FCC failed to define human intervention. According to The American Heritage Dictionary of the English Language, a *human* is defined as "a member of the primate genus Homo, especially a member of the species Homo sapiens, distinguished from other apes by a large brain and the capacity for speech," and *intervene* is defined as "to involve oneself in a situation so as to alter or hinder an action or development."

## Traditional Manual Dialing: Devices, Systems and Processes

13. Towards the very beginning of telephony, one placed a telephone call by simply lifting a receiver from a switchhook to establish a connection to a telephone company operator at a central office and requesting the operator to establish a connection to another party identified by name. The operator established the connection between the calling and called parties via a plug-and-jack physical circuit connection on a manual switchboard. As the popularity of the telephone increased, it became impossible for the operators to remember the names and associated physical jack locations of all the subscribers, so they were assigned unique telephone numbers. Multiple switchboards were required to satisfy the increasing demand. The individual switchboards had to be interconnected in order to interconnect the subscribers of each. Long distance toll lines were built to interconnect communities. The public switched telephone network (PSTN) was created.

14. As the popularity of the telephone increased further, the number of operators required to process calls increased to unmanageable and unaffordable levels. Almon B. Strowger is credited with having invented the electromechanical *step-by-step* central office switch in 1891 and the *dial telephone* in 1892, thereby shifting to the caller the responsibility for properly addressing the target party by number and relieving the telephone company of the cost of operators.

15. In 1904 the first telephone was introduced with a *dial* as we know it in contemporary terms. Such a rotary dial is a disk with holes in it that correspond to numbers 0 through 9 and that is mounted on a telephone set. The user places a call by addressing another telephone set identified by a sequence of numbers. In a simplified example from the early 1900s, the caller goes *off-hook* (i.e., lifts the handset from the cradle) to establish an electrical connection to the electromechanical central office switch owned by the local telephone company. The switch responds by providing *dial tone*, thereby advising the caller that the resources of the switch are

available. The caller then sticks his finger in the hole associated with the first number in the sequence and rotates the dial until it reaches a hard stop and then releases it. As the dial returns to the starting position, it makes and breaks electrical contacts and sends a sequence of electrical pulses across a link to the switch. When the caller has dialed all the numbers comprising the telephone number, the switch sets up the connection, *step by step*, between the originating and terminating telephone sets. Dial pulse telephones are considered primitive today.

16. Electromagnetic, common control circuit switches replaced the electromechanical step-by-step (SxS) switches beginning in 1938. In a crossbar (Xbar) switch, a marker recognizes a request for dial tone, directs a sender to *store* the dialed digits, and directs a translator to route the call, reserving a path through a switching matrix. Once the call connects, these various components become available to serve other calls. Compared to the SxS switch, the Xbar has relatively few moving parts. Xbar switches offer the advantages of increased intelligence, common control, faster connection speed, smaller physical footprint, lower maintenance costs, and greater traffic capacity.

17. The electronic common control (ECC) switch was first deployed in 1965. ECC switches are computers—initially analog and now digital. The basic process by which an ECC switch processes a telephone number is much the same as that of an electromechanical Xbar switch. Using a contemporary PSTN call as an example, a switch *register* (i.e., buffer memory device) receives and *stores* the dialed digits, verifies that the number matches the standard national/international dial plan, reserves a path through a switching matrix, reserves an optimal path through the PSTN in consideration of the calling subscriber's carrier preference and other routing variables, and sets up the call, perhaps in collaboration with multiple layers of switches associated with an interexchange (i.e., long distance) carrier and another local exchange carrier, passing information and instructions, including the originating and dialed telephone number to the other switches.

18. Note that private branch exchange (PBX) switches are privately owned switches, typically physically located on the end user organization's premises, that work in conjunction with the PSTN switches and in essentially the same manner as a central office. A PBX receives dialing

instructions from the caller, *stores* the dialed digits, processes the instructions, and forwards the number and perhaps other instructions to the central office local exchange switch at the edge of the PSTN.

19. Dial pulse telephone sets are considered primitive today. Most telephone sets have keypads that generate either tones or digital signals. However, people still talk about *dialing* a telephone number.

20. Touchtone was developed by Bell Telephone Laboratories in the late 1950s and deployed in the PSTN beginning in the 1960s. Touchtone is an analog technology that uses a dual tone multifrequency (DTMF) signaling method that employs fixed pairs of frequencies. DTMF keypads are arranged in a grid typically comprising three keys on the vertical axis and four keys on the horizontal axis. As the user depresses each key on the pad, the telephone set transmits a paired set of tones, comprising one high frequency tone and one low frequency tone, across a link to a switch that receives and *stores* them in a register for use in call setup.

21. Contemporary digital telephones *store*, process and send telephone numbers and other instructions to digital switches in the form of digital signals, rather than analog tones. The telephones and PBX provide progress tones to the caller in consideration of the human condition.

22. Note that all of the manual dialing processes described above require *human beings* (i.e., natural persons) to initiate the dialing process. None of these processes are automatic. In other words, none of these processes can take place without *human intervention*.

## Specialized Dialing: Devices, Systems and Processes

23. Companies that deliver high volume, communications intensive services such as telemarketing, surveying and opinion polling, and debt collection typically employ specialized computer-based telephony systems. These systems, sometimes mischaracterized as *dialers* or *autodialers*, variously support inbound and outbound calling. Outbound calling modes generally include some combination of *manual dialing*, *preview dialing*, *timed preview dialing*, *progressive dialing, blast dialing*, *unattended message dialing*, and *predictive dialing* modes. The systems are digital, stored program control computers specifically designed to perform and support sophisticated inbound and/or outbound voice communications functions. The various systems and

subsystems can be physically located either on the end user premises or in the *cloud*. The latter systems are housed in a data center and hosted (i.e., both owned and managed by a third party service provider). The systems comprise application software residing on one or more hardware platforms in the form of computer servers. The software often is modular in nature, which is to say that the end user organization licenses specific sets of functionality organized into discrete modules that rely on a common core of call processing hardware/software. The *agents* (i.e., users) of such systems typically work in *call centers*, although they also can work from remote locations such as personal residences. In this document, I will focus on agents working in call centers and engaged in outbound calling.

24. Manual dialing, in the context of such a system, can involve several separate and distinct processes, the simplest of which involves hand dialing a telephone number, digit-by-digit, via fingers on the keypad of a hardphone (i.e., a traditional hardware-based desktop digital touchtone telephone set). More commonly, manual calling involves the use of a *softphone*, which is a computer application that emulates a hardphone and may appear on screen as a dialpad or keypad. The agent can use the softphone either by touching the buttons via a touchscreen or, more commonly, by clicking on the buttons via a point-and-click mouse operation or, more commonly still, by entering the telephone number, digit-by-digit, via fingers on a computer keypad. The call then progresses through the telephony system much as it would through a general purpose PBX.

25. Preview Dialing is a method by which the call center agent views the profile of a target contact (e.g., customer, prospective customer, or debtor) as presented to the agent on screen via an application that provides an interface between a database and the agent's desktop computer. The profile commonly is maintained by a customer relationship management (CRM) system or other list management server that contains many such profiles and that can present the agent with profiles one at a time, either automatically or on demand. The agent can view a given profile, select one of perhaps several associated telephone numbers, and dial the number by clicking on a button or icon through a process generically known as *click-to-dial* (*CTD*). The call then progresses through the telephony system much as it would through a general purpose PBX. The

agent also can choose to skip a profile and move on to the next in the queue or on the list. Preview Dialing is a manual dialing process.

26. Timed Preview Dialing, a feature of some systems, is a variation of preview dialing that automatically dials the default telephone number associated with a given profile if the agent fails to dial a number manually after a predetermined, programmable length of time (e.g., 60 or 90 seconds). This is an automatic dialing process that engages due to a lack of human intervention.

27. Progressive Dialing, also known as Power Dialing, is a mode whereby the telephony system automatically dials a number from a list only when an agent is available. The agent is presented with the target profile as the system is dialing the call. Although this mode is somewhat inefficient as the call attempt may be unsuccessful due to busy or no answer conditions, for example, an agent is guaranteed to be available instantly when the call attempt is answered by a live human being. This mode is most appropriate for low volume, high value contact campaigns. Progressive dialing does not involve human call initiation or human intervention and, therefore, is an automatic dialing mode.

28. Predictive Dialing is a method by which the system typically dials high volumes of calls in parallel based on a mathematical pacing algorithm that predicts the availability of an agent based on a set of variables such as the number of agents, number of outbound circuits or channels, average talk time, average not ready time, average wrap-up time (e.g., recording of call dispositions), ratio of successful/unsuccessful call attempts, number of currently queued calls (inbound/outbound), and average pace of inbound calls. (Note: These example variables assume a blended (inbound/outbound) call center environment.) The pacing algorithm also optimizes call center performance in consideration of factors such as average wait time in queue and agent busy factors. Predictive Dialing is an automatic dialing mode.

29. Blast Dialing, also known as Unattended Message Dialing, is a method similar to predictive dialing by which the system dials high volumes of calls in parallel based on a mathematical pacing algorithm that predicts the availability of a specialized system or subsystem and, perhaps subsequently, a call center agent. In its purest form, blast dialing is used to dial telephone numbers and connect answered calls to an integrated voice response (IVR) system that

plays a recorded message, perhaps requiring a live human being to acknowledge the call by depressing a button on a touchtone dialpad. Blast dial systems can be used by moderators to connect large numbers of calls to a conference call. In a more sophisticated scenario, the IVR system requires that the target party identify himself as the right party (*right party contact*) and then transfers the call to a waiting agent. Blast dialing is an automatic dialing mode.

## ANALYSIS

30. [redacted].

31. SolarCity's sales teams used the following telephony systems during the following timeframes in the class period:

[redacted]

*See* Declaration of Senior Systems Support Engineer Kouri Ronsenberg.

[redacted]

[redacted]

[redacted]

33. [redacted]

[redacted]

34. [redacted]

[redacted]

35. [redacted]

[redacted]

36. [redacted]

[redacted]

37. [redacted]

[redacted]

38. [redacted]

[redacted]

39. [redacted]

[redacted]

40. [redacted]

[redacted]

41. [redacted]

42. [redacted]

43. [redacted]

44. [redacted]

[redacted]

45. [redacted]

[redacted]

46. [redacted]

[redacted]

[redacted]

47. [redacted]

[redacted]

48. [redacted]

[redacted]

49. [redacted]

[redacted]

50. [redacted]

[redacted]

51. [redacted]

[redacted]

52. [redacted]

[redacted]

53. [redacted]

54. [redacted]

55. [redacted]

**Genesys**

56. [redacted]

57. [redacted]

58. [redacted]

59. [redacted]

60. [redacted]

61. [redacted]

[redacted]

62. [redacted]

[redacted]

63. [redacted]

[redacted].

64. [redacted]

[redacted].

**INDIVIDUALIZED DETERMINATIONS ARE REQUIRED**

65. [redacted]

[redacted].

66. [redacted]

[redacted]

[redacted].

## CONCLUSIONS

67. [redacted].

68. [redacted].

69. [redacted].

70. [redacted].

71. [redacted]

[redacted]

72. It is my opinion that Mr. Snyder's failed to properly research and, therefore, failed to consider publically available documentation contemporaneous to the specific systems and versions employed by SolarCity. Further, it is my opinion that these failures render his opinions unreliable and unworthy of consideration.

## MATERIALS REVIEWED

In the process of researching and developing this report, I reviewed and considered the following materials:

- Telephone Consumer Protection Act of 1991—Restrictions on the use of telephone equipment 47 U.S.C. § 227
- FCC Report and Order (July 3, 2003)
- FCC Declaratory Ruling (January 4, 2008)
- TCPA Omnibus Declaratory Ruling and Order (FCC 15-72) (June 18, 2015)
- The American Heritage Dictionary of the English Language
- https://ahdictionary.com/word/search.html?q=intervening
- Declaration of Randall A. Snyder (December 15, 2016)
- Deposition of Johathan Raymond (November 7, 2016)
- Deposition of Sean Peterson (November 14, 2016)
- Deposition of Alexamder Sebenius (November 22, 2016)
- Report of Anya Verkhovskaya (December 8, 2016)
- Deposition of Randall A. Snyder (January 12, 2017)
- [redacted]
  - [redacted]
  - [redacted]
    [redacted]
- [redacted]
- [redacted]

[redacted]

Dated: January 26, 2017

RAY HORAK